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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/864,109	05/24/2001	Gerald Francis McBrearty	AUS920000939US1	1454

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EXAMINER

INGBERG, TODD D

ART UNIT	PAPER NUMBER
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2124

DATE MAILED: 05/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/864,109

Applicant(s)

MCBREARTY ET AL.

Examiner

Todd Ingberg

Art Unit

2124

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claims 1 – 24 have been examined.

Drawings

1. Figures 1 and 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance. Neither of the figures show the present invention. The description says they “might “ be used to run the invention.

Admitted Prior Art

2. The following should be old and well known prior to the time of invention if not part of the enabling technology for the invention.

A. **-g option in the C compiler** – performs analysis of the object code and symbol table as a result of the compilation process.

B. **DUMP** utility in UNIX.

Well Known in the Art

The following are considered to be well known in the art to one of ordinary skill in the art of Debuggers.

A. The role of Symbol Tables in a Debugger.

Loading a symbol table into a debugger is considered grossly old and well known. Prior art of record mentions the loading of the programs symbol table from the object file or the actual executable (Examiner is terming this internal since it comes from a byproduct of the compiler. Also the basis of the rejection is the loading of the symbol table externally by a routine that generates the symbol table is also well known. The invention is using the -g function of the C compiler. Examiner is calling this a form of external symbol table generation. Examiner presumes this is because a flat file is generated and easily used as input to generate the script. Also, well known is the loading of the symbol table in memory for use by the debugger.

Art Unit: 2124

B. Contents of a Symbol Table (ST)

One of ordinary skill in the art would understand the basic contents of a Symbol Table. The Examiner has made of record a portion of the September 12, 1985 book Compilers Principles, Techniques and Tools section on the Symbol Table pages 429 – 440.

Claim Rejections - 35 USC § 112

3. Claims 1, 9 and 17 (and all dependent from these claims) are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The following limitations are not clear and concise in the current claims.

A method of debugging a software program, said software program executing properly with at least one of a first set of options and executing improperly with at least one of a second set of options.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1 – 3, 5, 9 – 11, 13, 17 – 19 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by **Borland Turbo Debugger 1991**.

Claim 1

Borland anticipates a method of debugging a software program, said software program executing properly with at least one of a first set of options and executing improperly with at least one of a second set of options, said method comprising the steps of: generating a first log file by executing said program with said at least one of said first set of options, said first log file including all functions executed by said program during this first execution; generating a second log file by executing said program with said at least one of said second set of options, said second log file including all functions executed by said program during this second execution; and comparing said first log file with said second log file to debug the software program.

Art Unit: 2124

Examiner's Rejection

The ability to build a Symbol Table externally is taught in the Borland Turbo Debugger. The file extension for the external symbol table is .TDS as on page 377 also see page 358 for the loading of the external table. The teaching of generating an external Symbol Table is on page 375. The Symbol Table in the debugger is loaded into memory Borland uses a Terminate and Stay Resident (TSR) routine (on first reading this might not be clear – be sure to read the memory mapping for symbols (pages 304 and 307) OR refer to prior art of record. It is the loading and comparison of the ST. The Borland reference provides evidence of this comparison when error messages are generated (page 378).

Claim 9

Borland anticipates a computer program product for debugging a software program, said software program executing properly with at least one of a first set of options and executing improperly with at least one of a second set of options, said computer program product comprising: instruction means for generating a first log file by executing said program with said at least one of said

first set of options, said first log file including all functions executed by said program during this first execution; instruction means for generating a second log file by executing said program with said at least one of said second set of options, said second log file including all functions executed by said program during this second execution; and instruction means for comparing said first log file with said second log file to debug the software program.

Examiner's Rejection

See the rejection for claim 1.

Claim 17

Borland anticipates a system for debugging a software program, said software program executing properly with at least one of a first set of options and executing improperly with at least one of a second set of options, comprising: a first log file being generated by executing said program with said at least one of said first set of options, said first log file including all functions executed by said program during this first execution; a second log file being generated by executing said program with said at least one of said second set of options, said second log file including all functions executed by said program during this second execution; and means for comparing said first log file with said second log file to debug the software program.

Examiner's Rejection

See the rejection for claim 1.

Claim 2

The method according to claim 1, further comprising the steps of: generating said first log file including a first set of return codes; generating said second log file including a second set of return codes; and comparing said first set of return codes with said second set of return codes to debug the software program.

Examiner's Rejection

Art Unit: 2124

At this point in the claims the return codes are not specific enough a debug script (in fact debug script is absent from the limitations). The intended use of return codes meets the current claim limitations as per page 141.

Claim 3

The method according to claim 1, further comprising the step of compiling said software program to generate compiled code, said compiled code including a listing of said functions.

Examiner's Rejection

Interpreted in the broadest reasonable meaning to be the symbol table which is inherent in a computer program and taught in the independent claims.

Claim 5

The method according to claim 3, further comprising the step of generating a file including said listing obtained from said compiled code.

Examiner's Rejection

Interpreted in the broadest reasonable meaning to be the symbol table which is inherent in a computer program and taught in the independent claims

Claim 10

The product according to claim 9, further comprising: instruction means for generating said first log file including a first set of return codes; instruction means for generating said second log file including a second set of return codes; and instruction means for comparing said first set of return codes with said second set of return codes to debug the software program.

Examiner's Rejection

See the rejection for claim 2.

Claim 11

The product according to claim 9, further comprising instruction means for compiling said software program to generate compiled code, said compiled code including a listing of said functions.

Examiner's Rejection

Interpreted in the broadest reasonable meaning to be the symbol table which is inherent in a computer program and taught in the independent claims

Claim 13

The product according to claim 11, further comprising instruction means for generating a file including said listing obtained from said compiled code.

Examiner's Rejection

Interpreted in the broadest reasonable meaning to be the symbol table which is inherent in a computer program and taught in the independent claims.

Claim 18

The system according to claim 17, further comprising: said first log file being generated including a first set of return codes; said second log file being generated including a second set

Art Unit: 2124

of return codes; and means for comparing said first set of return codes with said second set of return codes to debug the software program.

Examiner's Rejection

See the rejection for claim 2.

Claim 19

The system according to claim 17, further comprising said software program being compiled to generate compiled code, said compiled code including a listing of said functions.

Examiner's Rejection

Interpreted in the broadest reasonable meaning to be the symbol table which is inherent in a computer program and taught in the independent claims.

Claim 21

The system according to claim 19, further comprising a file being generated including said listing obtained from said compiled code.

Examiner's Rejection

Interpreted in the broadest reasonable meaning to be the symbol table which is inherent in a computer program and taught in the independent claims.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 4, 6, 7, 12, 14, 15, 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over The Borland Turbo Debugger building an external Symbol Table for use in a Debugger regardless of the environment (programming language or Operating System (OS)) in view of building a debug test script for a debugger as taught in USPN # 6,161,216 Shagan. It is deemed obvious to combine the teaching of building an external Symbol Table as taught by Borland with the teaching of building a Debugging Script from Shagan because the Symbol

Art Unit: 2124

Table is a key source of information for determine what to test code (Shagan, col 2, coverage lines 45 – 46).

Note: Shagan uses the term “trace point” to represent a breakpoint.

Claim 4

The method according to claim 3, further comprising the step of compiling said software program utilizing a C compiler and utilizing a "-g" option, said "-g" option generating said listing of said function.

Examiner's Rejection

Borland teaches a technique for building external Symbol Tables. External Symbol Tables are taught in the prior art and are deemed obvious regardless of the utility to build them because ST enable debuggers to identify the symbols in a program. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to use the admitted prior art C compiler option to generate an external ST.

Claim 12

The product according to claim 11, further comprising instruction means for compiling said software program utilizing a C compiler and utilizing a "-g" option, said "-g" option generating said listing of said function.

Examiner's Rejection

See the rejection for claim 4.

Claim 20

The system according to claim 19, further comprising said software program being compiled utilizing a C compiler and utilizing a "-g" option, said "-g" option generating said listing of said function.

Examiner's Rejection

See the rejection for claim 4.

Claim 6

The method according to claim 5, further comprising the step of utilizing a UNIX dump command to generate said file, said UNIX dump command causing an output of said listing.

Examiner's Rejection

The building of external ST is taught by Borland and the use of the UNIX utility DUMP (Admitted prior art) is deemed obvious because the command lists information relevant to the programs functions. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to use the admitted prior art UNIX DUMP utility to generate information on Symbols

Claim 8

The method according to claim 1, further comprising the steps of: automatically generating a debug script including the steps of: generating script code for each of a plurality of function calls included in said software program, said script code setting a breakpoint at each of said plurality of function calls; generating script code which logs each of a plurality of said plurality of functions calls executed by said software program when said software program is executed under

Art Unit: 2124

the control of said debug program; and generating script code which causes execution of said software program to continue after each of said plurality of said plurality of function calls is logged.

Examiner's Rejection

Shagan teaches placing breakpoints in the debug script (Col 1, Summary of invention) and specifically mentions where to place the break points including prior to calling a function (Col 2, lines 20 – 35).

Claim 16

The product according to claim 9, further comprising: instruction means for automatically generating a debug script including: instruction means for generating script code for each of a plurality of function calls included in said software program, said script code setting a breakpoint at each of said plurality of function calls; instruction means for generating script code which logs each of a plurality of said plurality of functions calls executed by said software program when said software program is executed under the control of said debug program; and instruction means for generating script code which causes execution of said software program to continue after each of said plurality of said plurality of function calls is logged.

Examiner's Rejection

See the rejection for claim 8

Claim 24

The system according to claim 17, further comprising: a debug script being automatically generated including: script code being generated for each of a plurality of function calls included in said software program, said script code setting a breakpoint at each of said plurality of function calls; script code being generated which logs each of a plurality of said plurality of functions calls executed by said software program when said software program is executed under the control of said debug program; and script code being generated which causes execution of said software program, to continue after each of said plurality of said plurality of function calls is logged.

Examiner's Rejection

See the rejection for claim 8

Claim 14

The product according to claim 13, further comprising instruction means for utilizing a UNIX dump command to generate said file, said UNIX dump command causing an output of said listing.

Examiner's Rejection

See the rejection for claim 6

Claim 22

The system according to claim 21, further comprising a UNIX dump command being utilized to generate said file, said UNIX dump command causing an output of said listing.

Examiner's Rejection

See the rejection for claim 6.

Claim 7 (dependent on 6)

The method according to claim 6, further comprising the step of generating a debug script utilizing said file.

Art Unit: 2124

Examiner's Rejection

Claim 15

The product according to claim 14, further comprising instruction means for generating a debug script utilizing said file.

Examiner's Rejection

See the rejection for claim 7.

Claim 23 (dependent on 22)

The system according to claim 22, further comprising a debug script being generated utilizing said file.

Examiner's Rejection

See the rejection for claim 7.

Correspondence Information

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Todd Ingberg** whose telephone number is (703) 305-9775. The examiner can normally be reached during the following hours:

Monday	Tuesday	Wednesday	Thursday	Friday
6:15 – 1:30	6:15- 3:45	6:15 – 4:45	6:15-3:45	6:15-130

This schedule began December 1, 2003 and is subject to change.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Kakali Chaki** can be reached on (703) 305-9662. Please, note that as of August 4, 2003 the **FAX number** changed for the organization where this application or proceeding is assigned is **(703) 872-9306**.

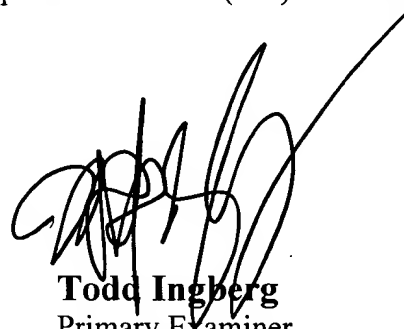
Also, be advised the United States Patent Office **new address** is

Post Office Box 1450

Alexandria, Virginia 22313-1450

Art Unit: 2124

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-9700.

A handwritten signature in black ink, appearing to read 'Todd Ingberg', with a long, sweeping line extending from the end of the signature towards the top right of the page.

Todd Ingberg
Primary Examiner
Art Unit 2124
May 4, 2004